

A Review of the 2004 Water Year in Colorado

Nolan Doesken

Colorado Climate Center, CSU

Mike Gillespie

Snow Survey Division, USDA, NRCS

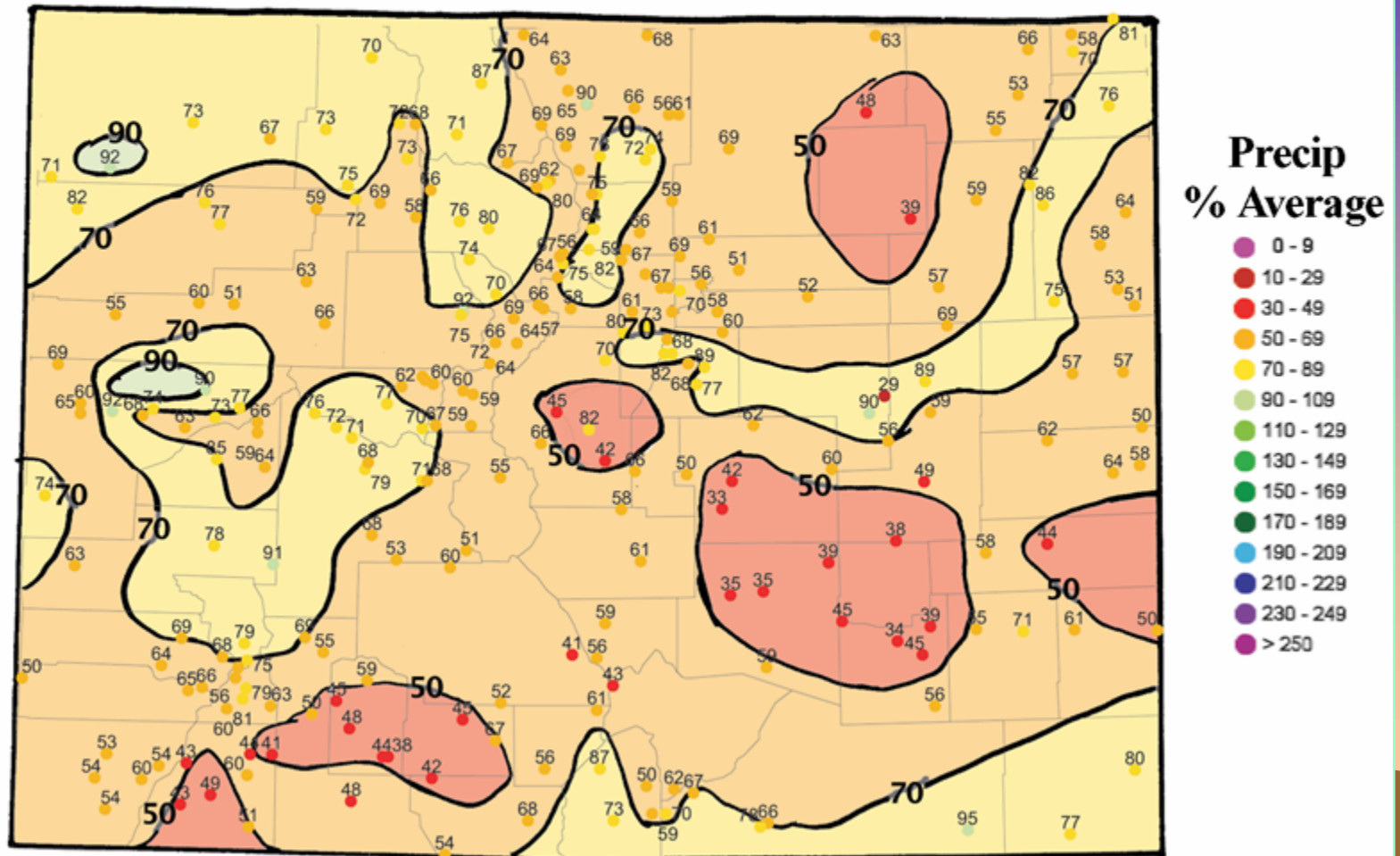
Prepared by Odie Bliss

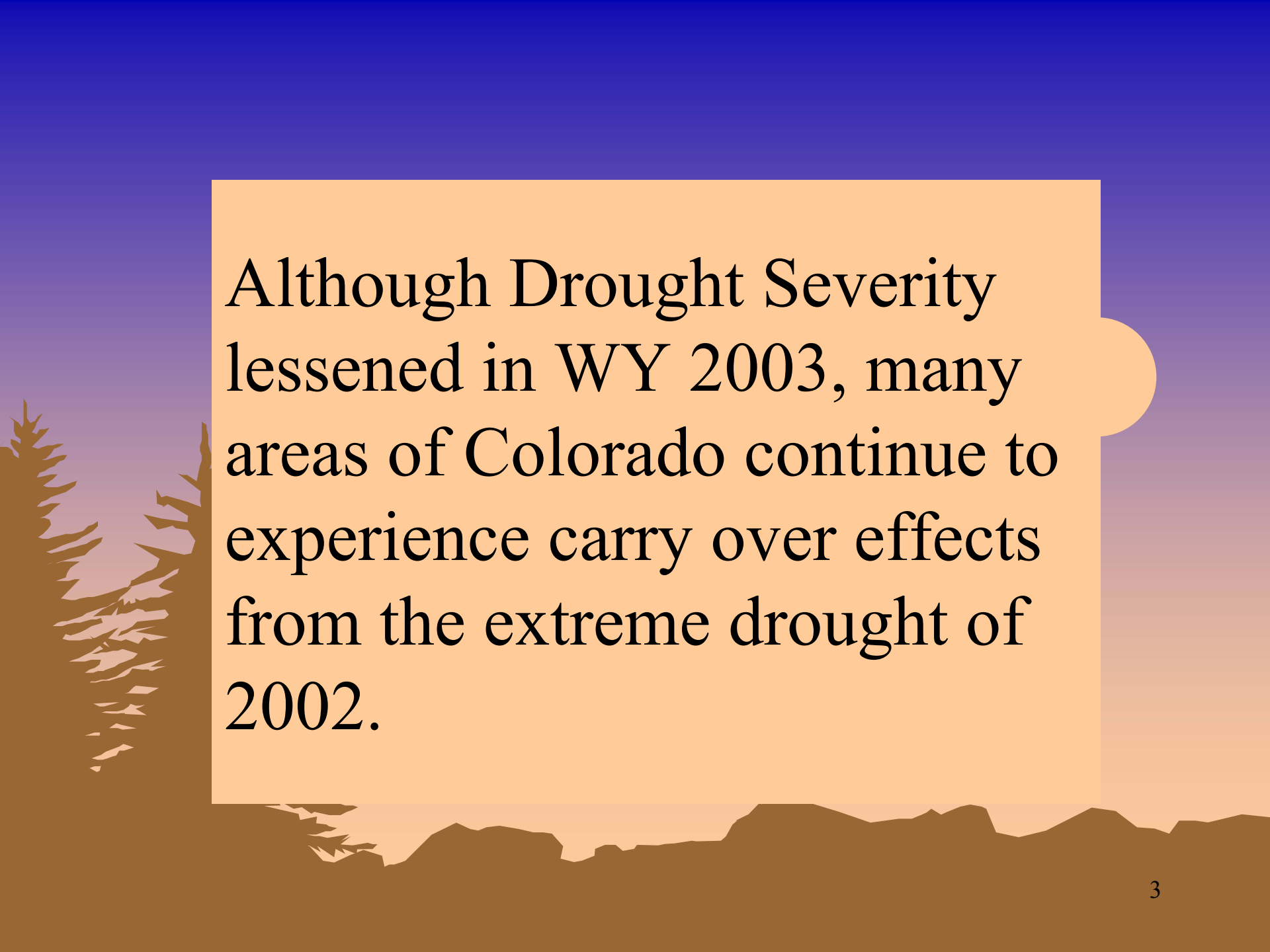


<http://ccc.atmos.colostate.edu>
<http://www.co.nrcs.usda.gov/snow/>

Water Year 2002 (Oct. 2001 - Sept. 2002)

Precipitation Percent of Average for 1961-1990 Averages

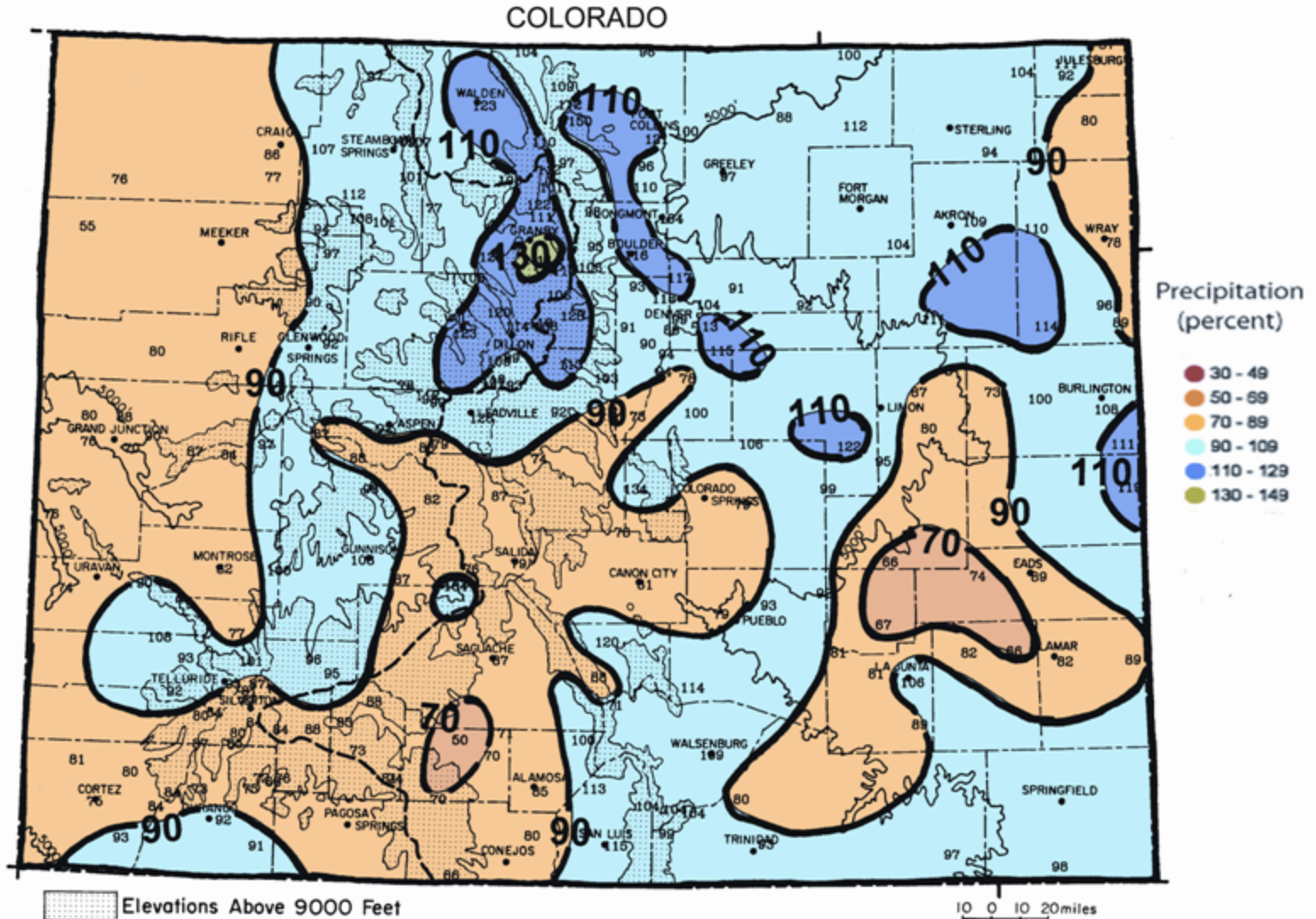




Although Drought Severity lessened in WY 2003, many areas of Colorado continue to experience carry over effects from the extreme drought of 2002.

2003 Water Year Precipitation

October 2002 - September 2003 precipitation
as a percent of the 1971-2000 average.

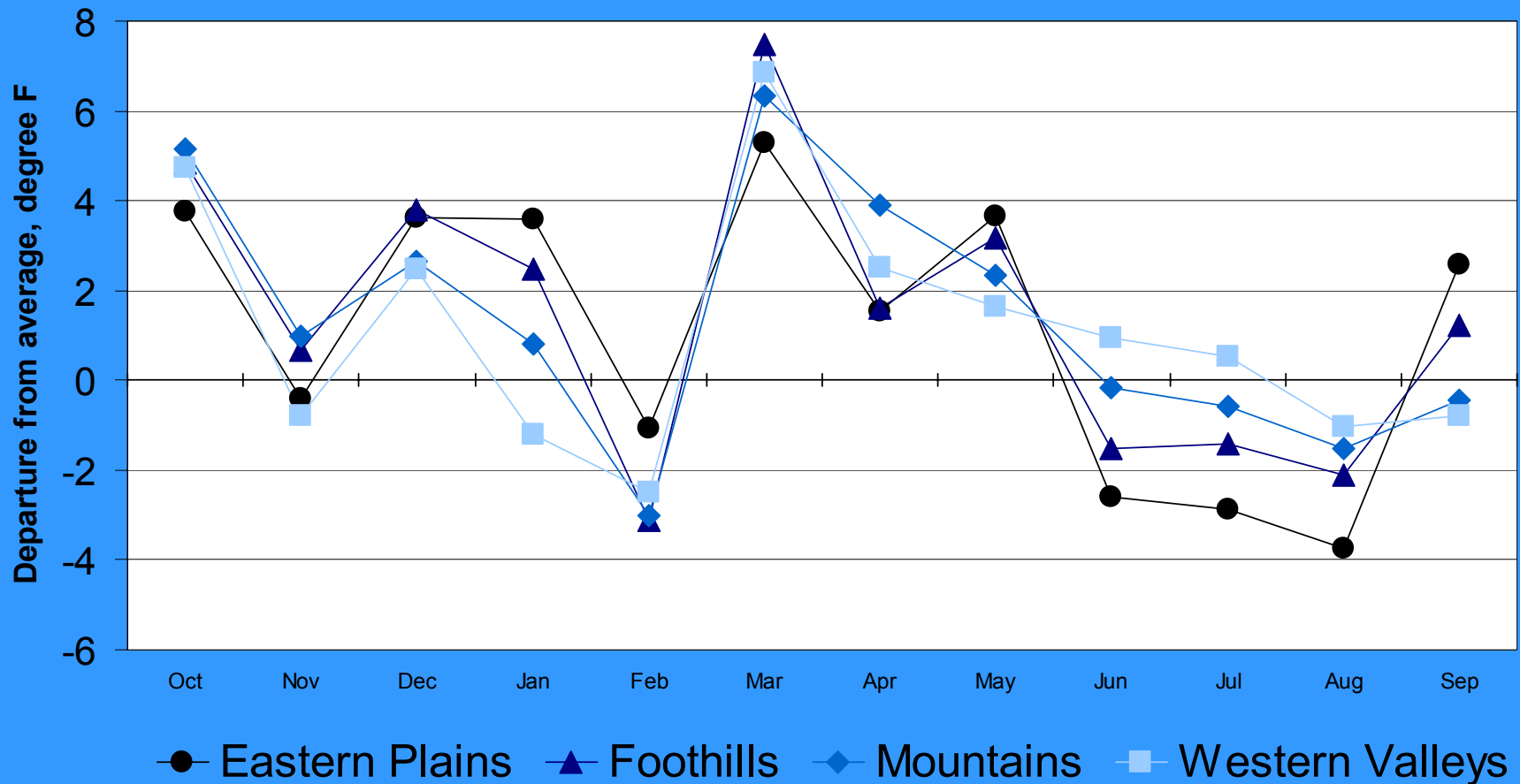


WY2004 temperatures in Colorado were above the 1971-2000 average.

- October, December, March and May were particularly warm.
- Summer temperatures were cooler than average for the first time in several years.
- For some areas east of the mountains, it was the coolest summer in several decades.

2004 WY Temperature Departures

Water Year 2004

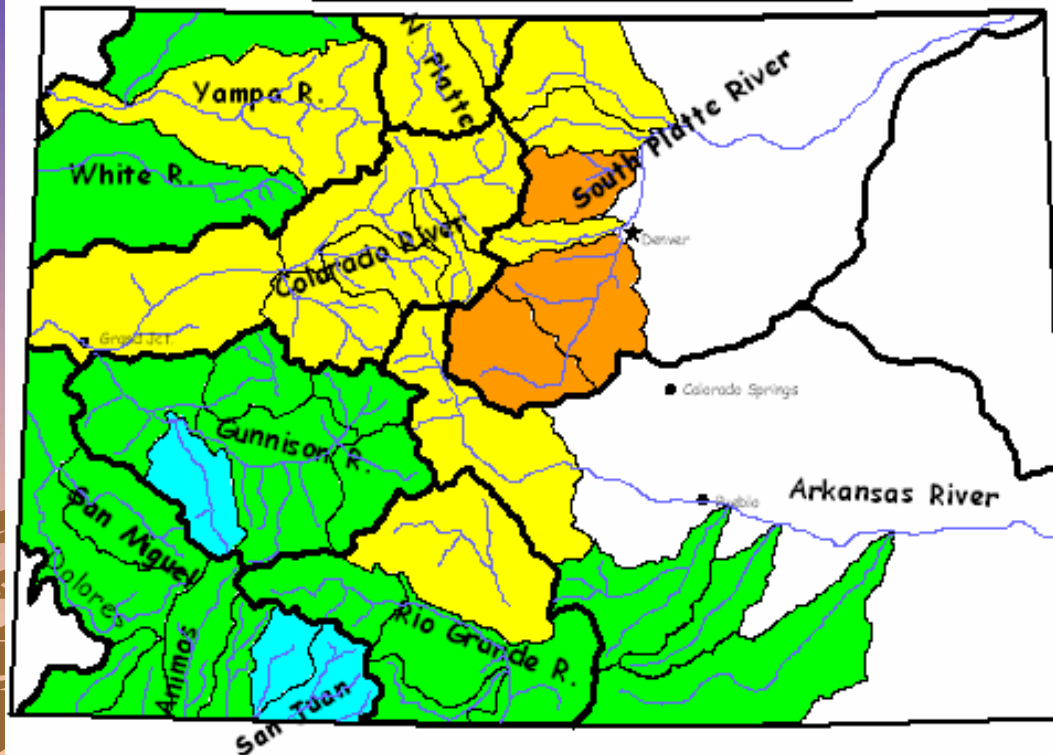


WY2004 precipitation











- October, March and May were dry statewide.
- June, July and August were wet east of the mountains.
- Best drought recovery along the Front Range and southeast.

March 1 Snowpack

Snowpack
March 1, 2004

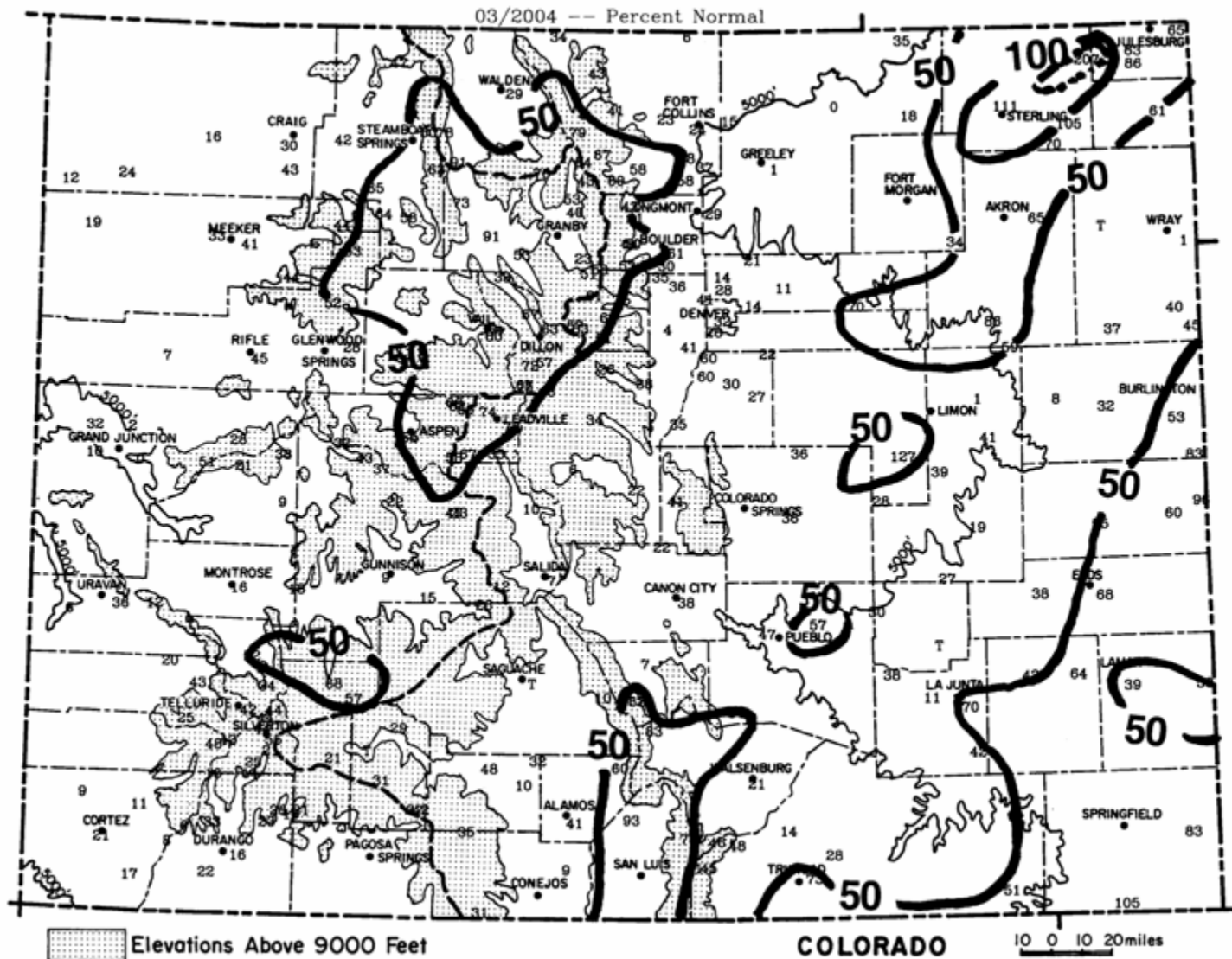


Legend

-  > 150% of Average
-  130 - 150% of Average
-  110 - 129% of Average
-  90 - 109% of Average
-  70 - 89% of Average
-  50 - 69% of Average
-  < 50% of Average
-  Not Surveyed
-  Major Basin Boundary
-  Watershed Boundary

Statewide: 90% of Average
107% of Last Year

March 2004 % of Average

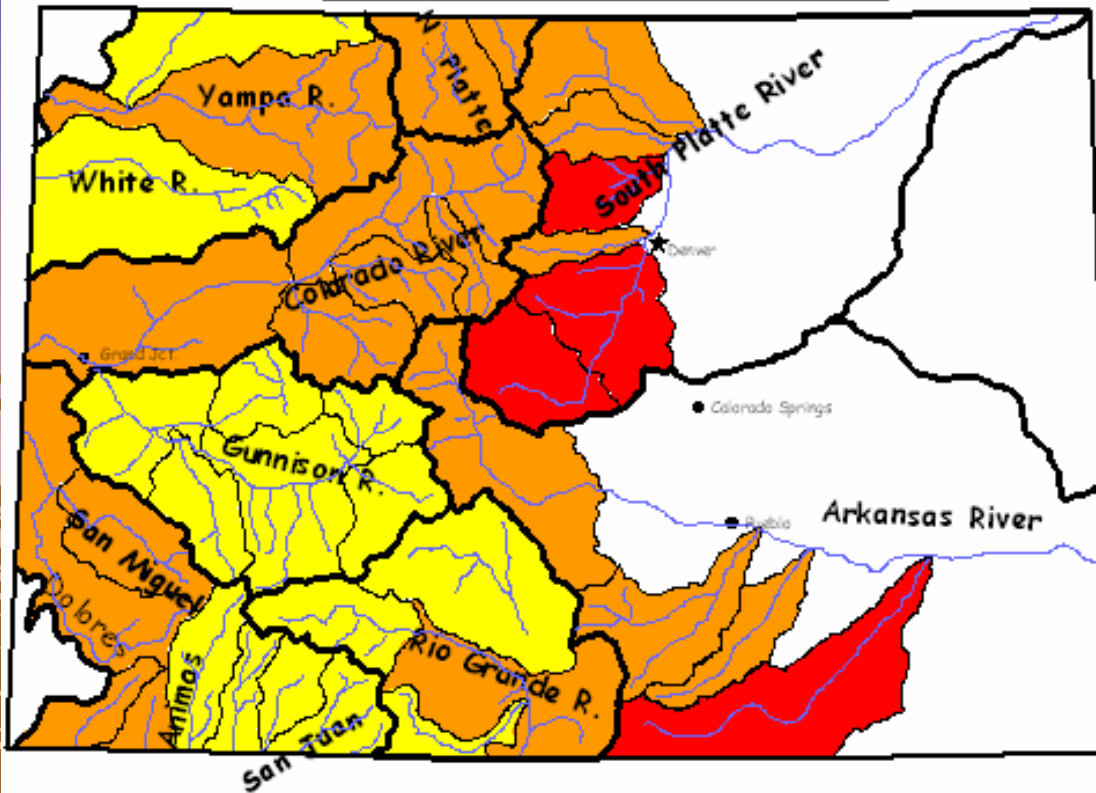
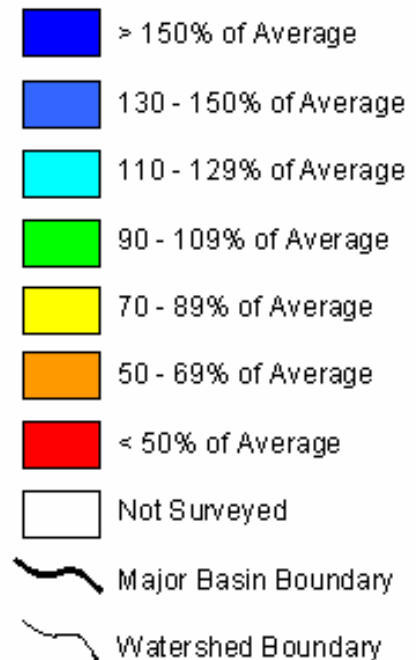


April 1 Snowpack

Snowpack
April 1, 2004

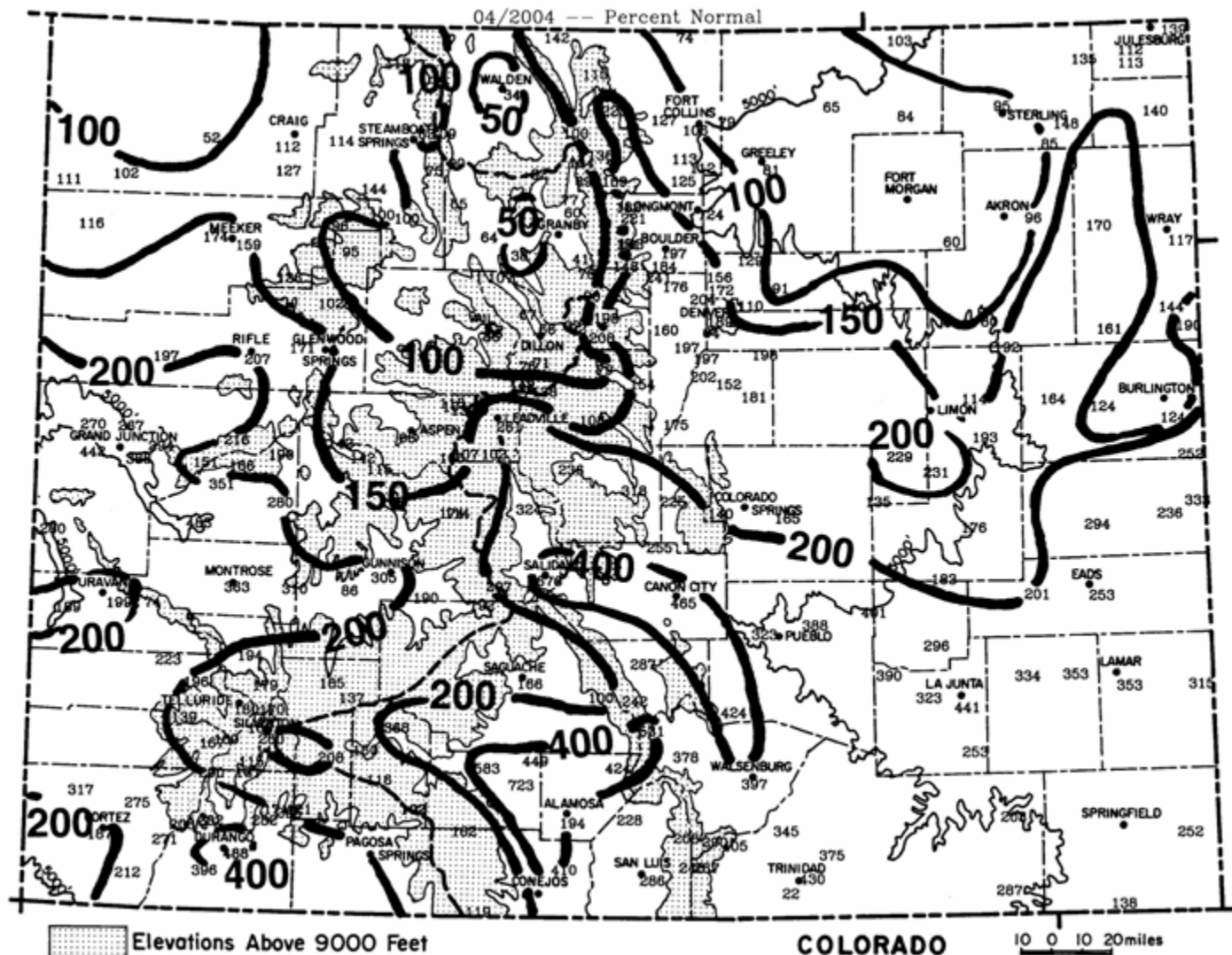


Legend

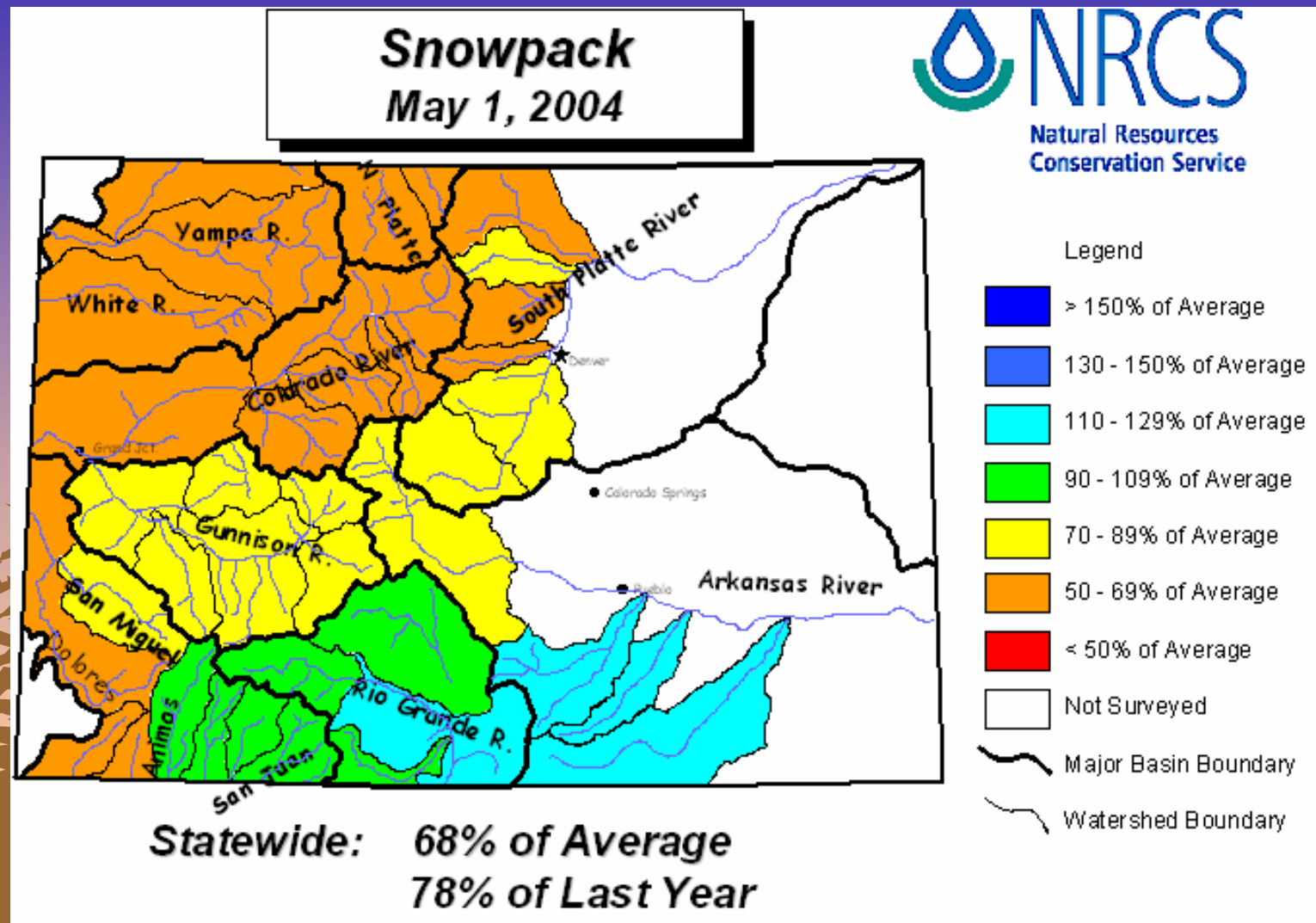


Statewide: 65% of Average
69% of Last Year

April 2004 % of Average

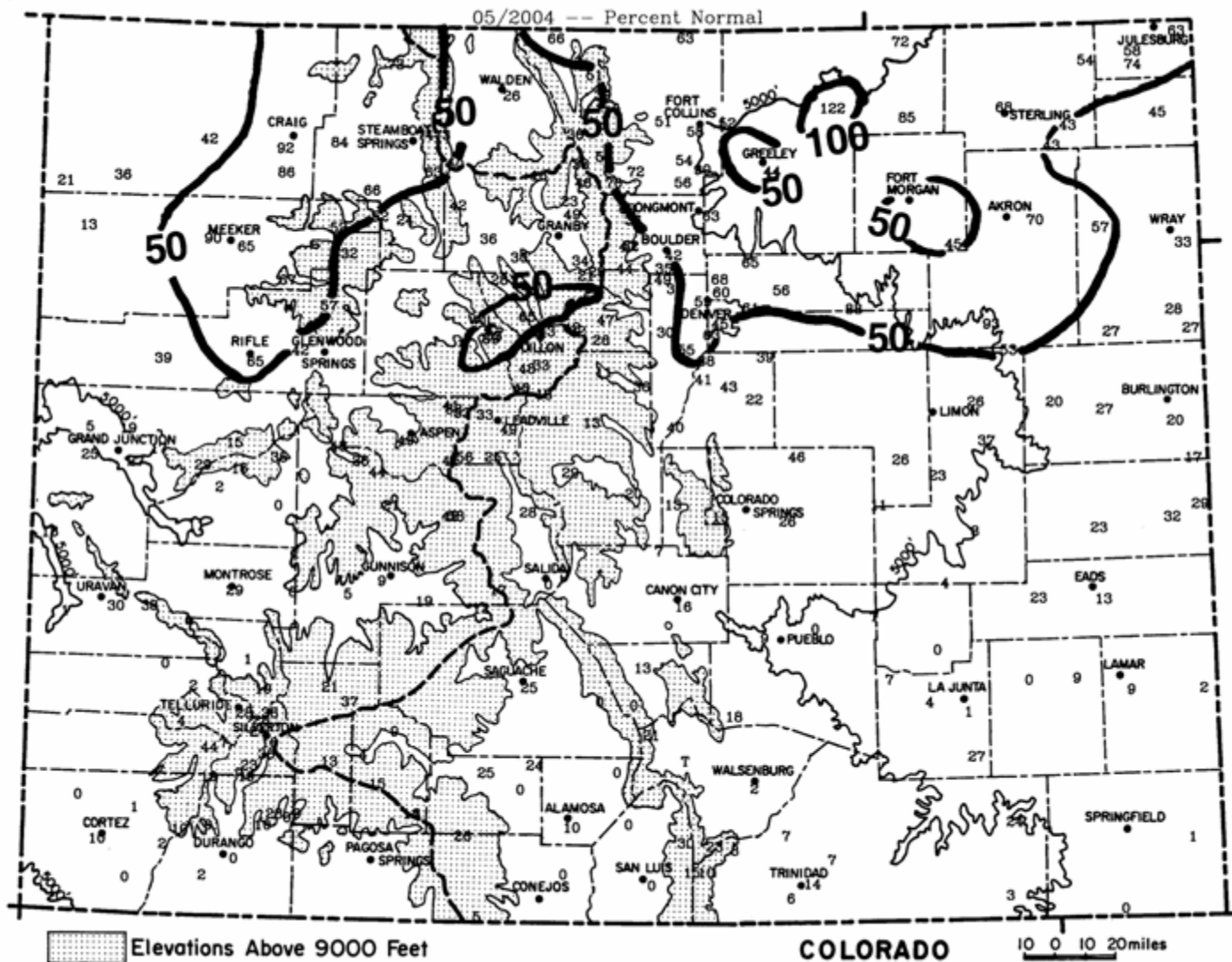


May 1 Snowpack





May 2004 % of Average

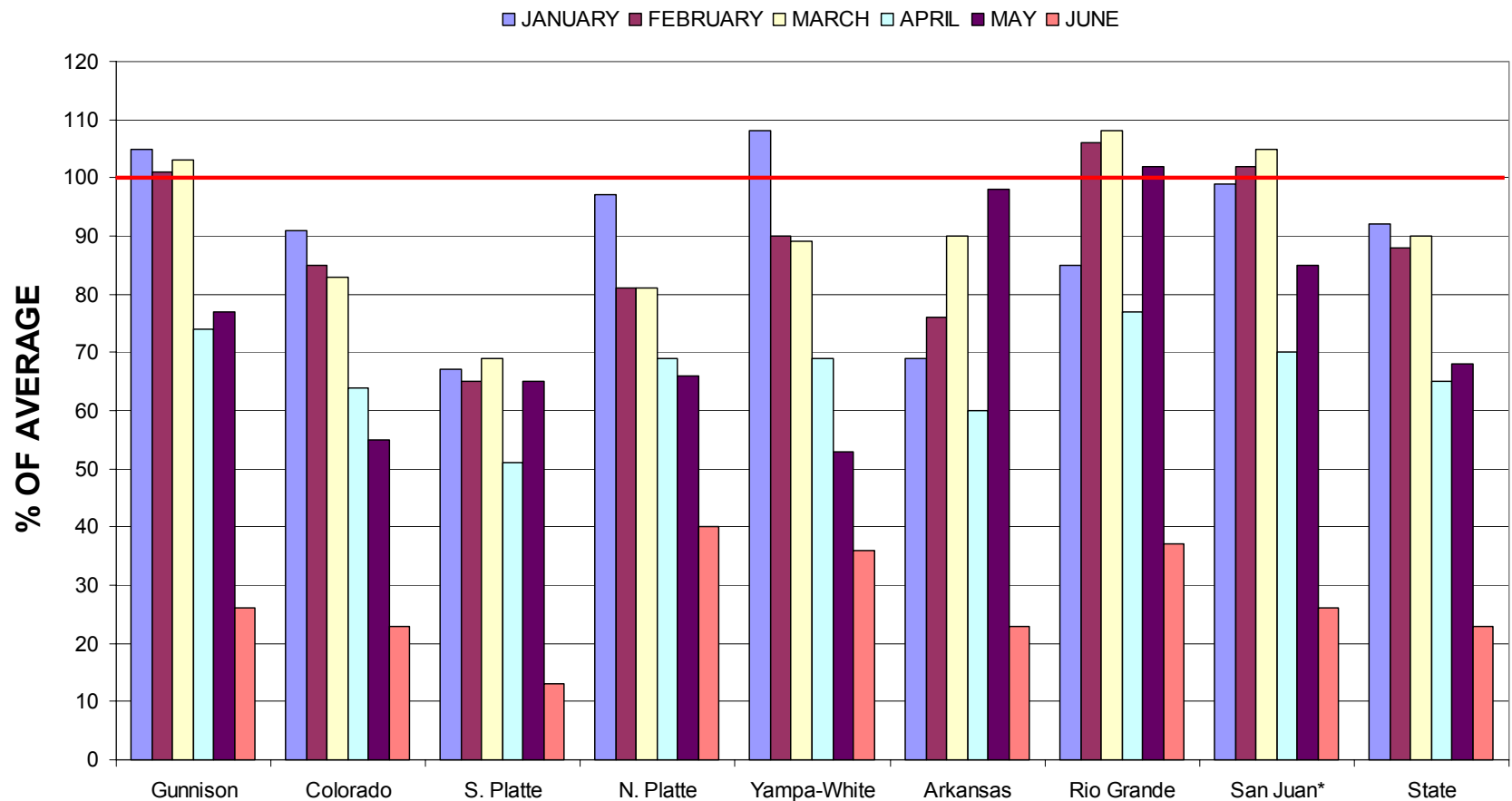


Colorado Snowpack for 2004

COLORADO SNOWPACK

Summary for 2004

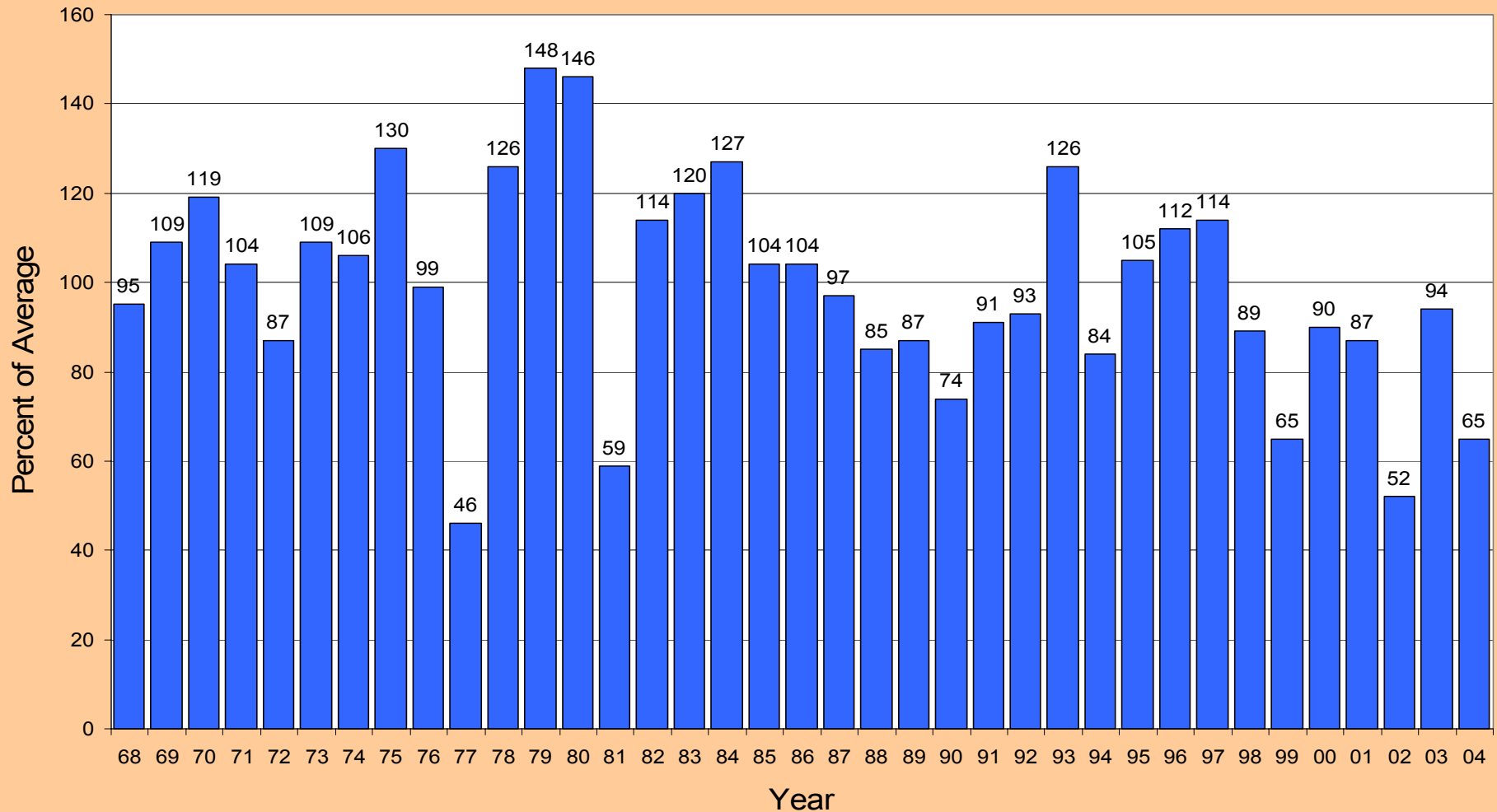
USDA Natural Resources Conservation Service



*Includes Animas, Dolores, San Miguel Basins

April 1 Snowpack History

APRIL 1 SNOWPACK COLORADO STATEWIDE





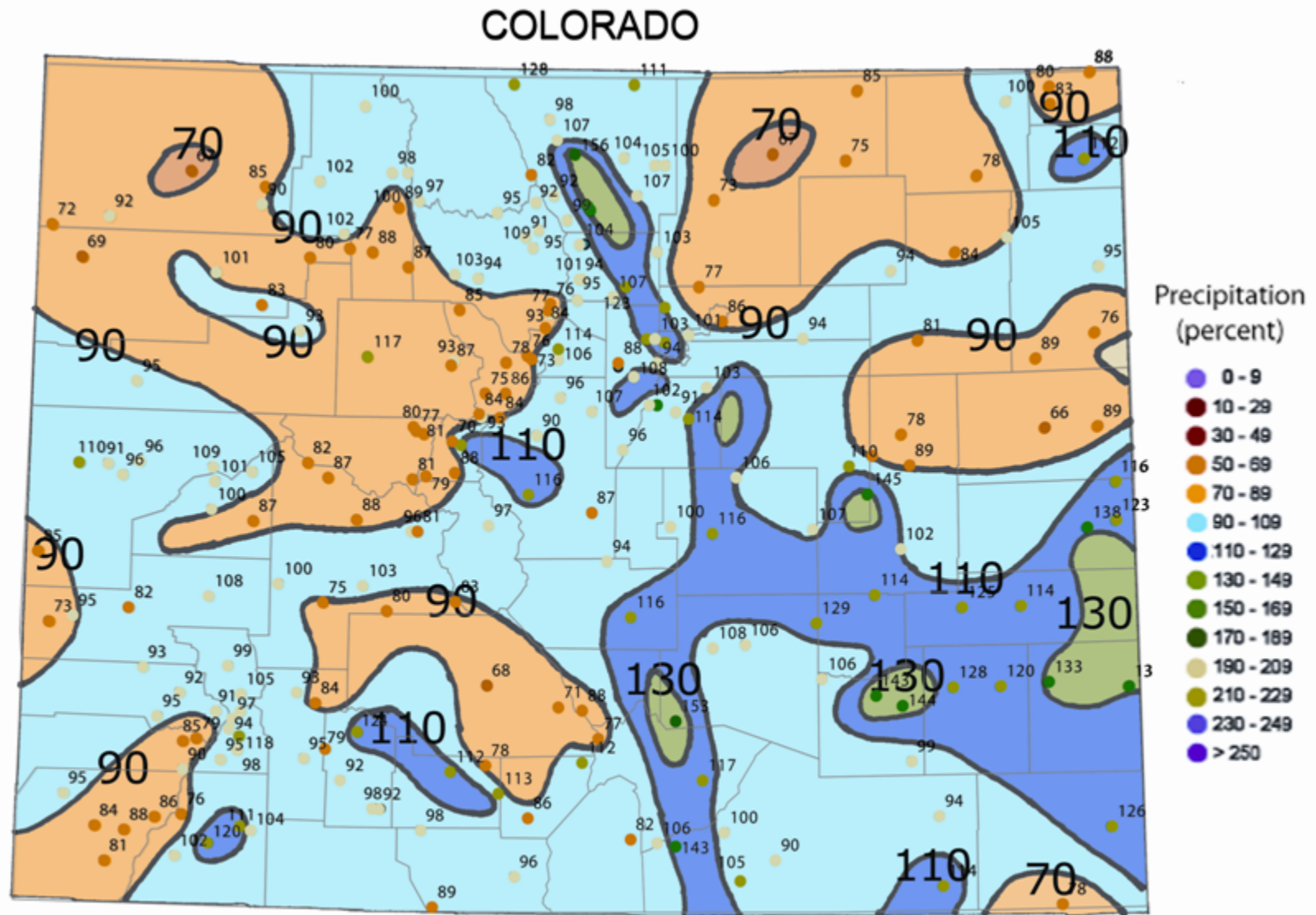


A vertical photograph of a pine tree against a sunset sky. The tree is in the foreground, with its branches and needles silhouetted against the bright, orange and yellow light of the setting sun. The sky transitions from a deep orange near the horizon to a lighter, hazy yellow at the top. The overall mood is peaceful and serene.





2004 Water Year Precipitation

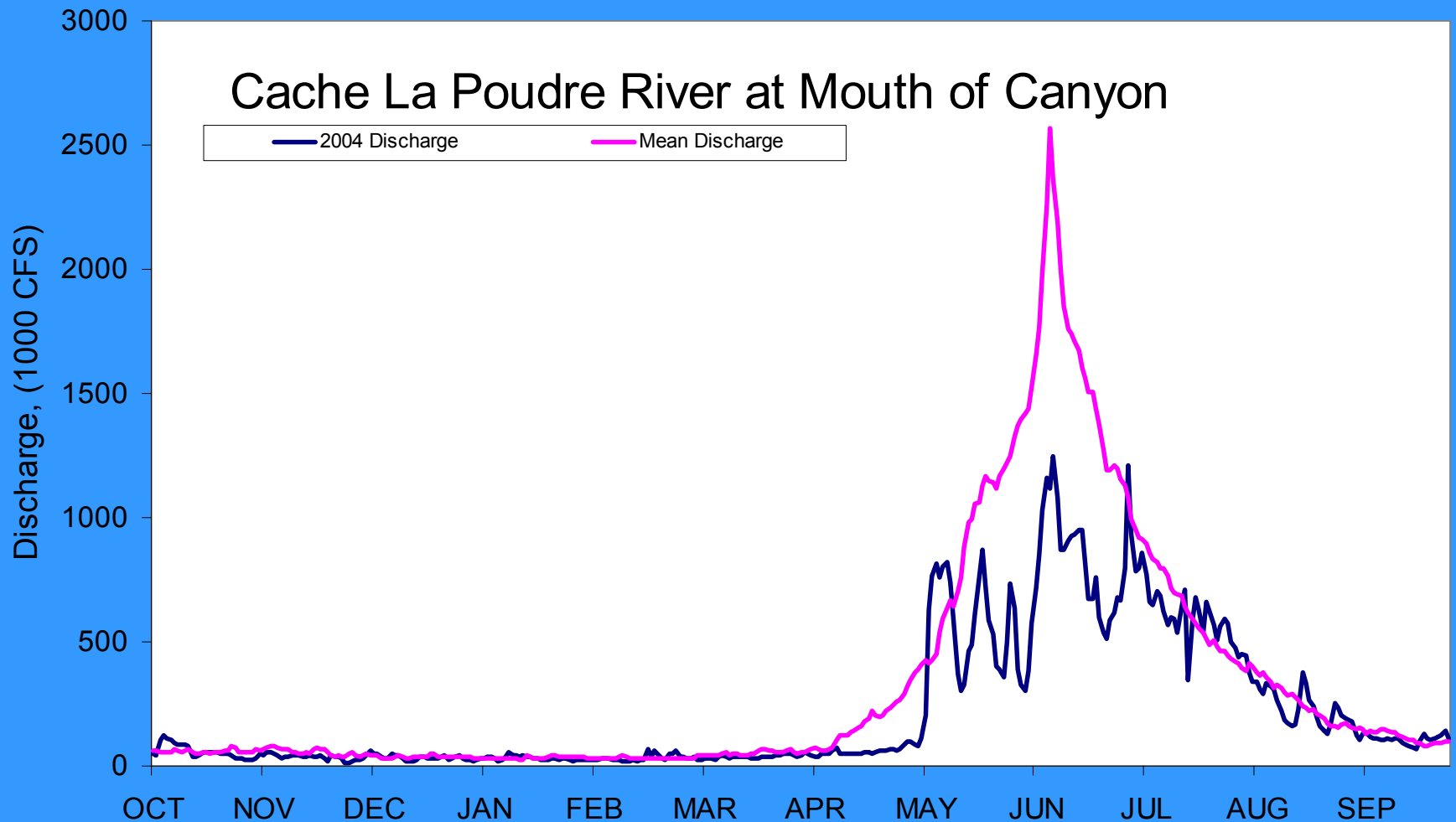


Water Year 2004 (October 2003 through September 2004) precipitation as a percent of the 1971-2000 average.

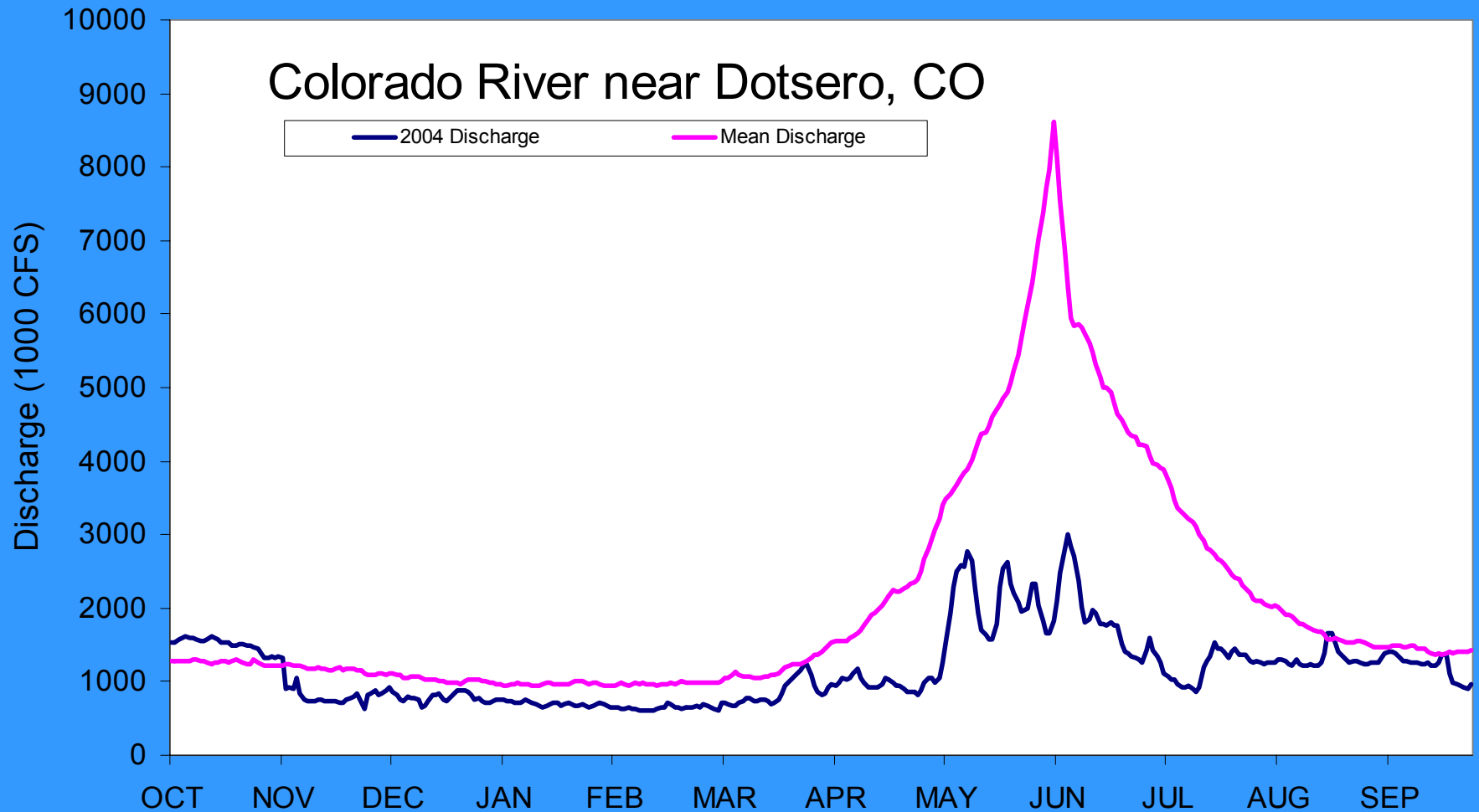
2004 Streamflow

- Low soil moisture reduced runoff efficiencies.
- Annual volumes were generally below average.
- Multiple peak flows over longer duration.
- Highest volumes in the southern basins.

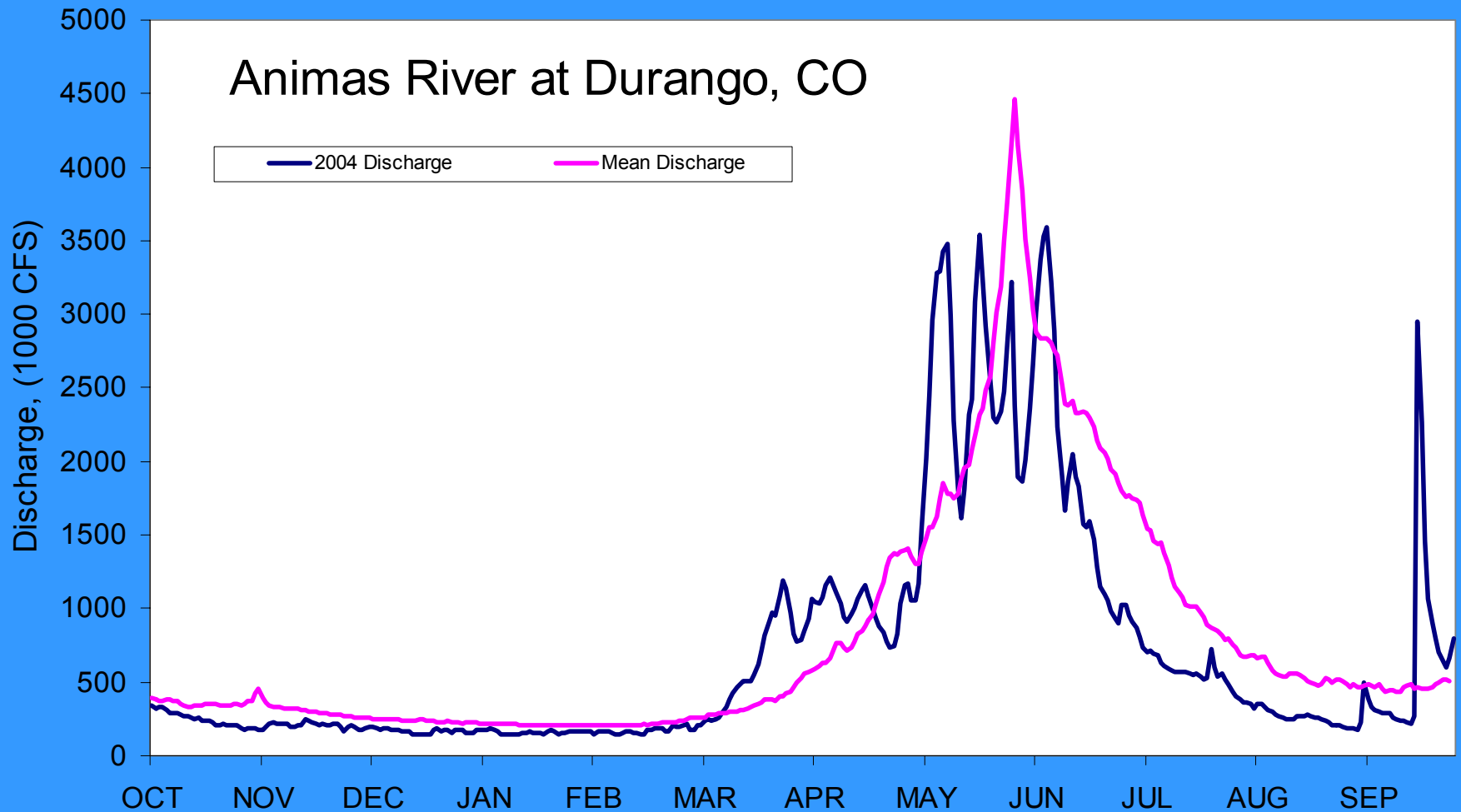
Cache La Poudre River Streamflow



Colorado River Streamflow

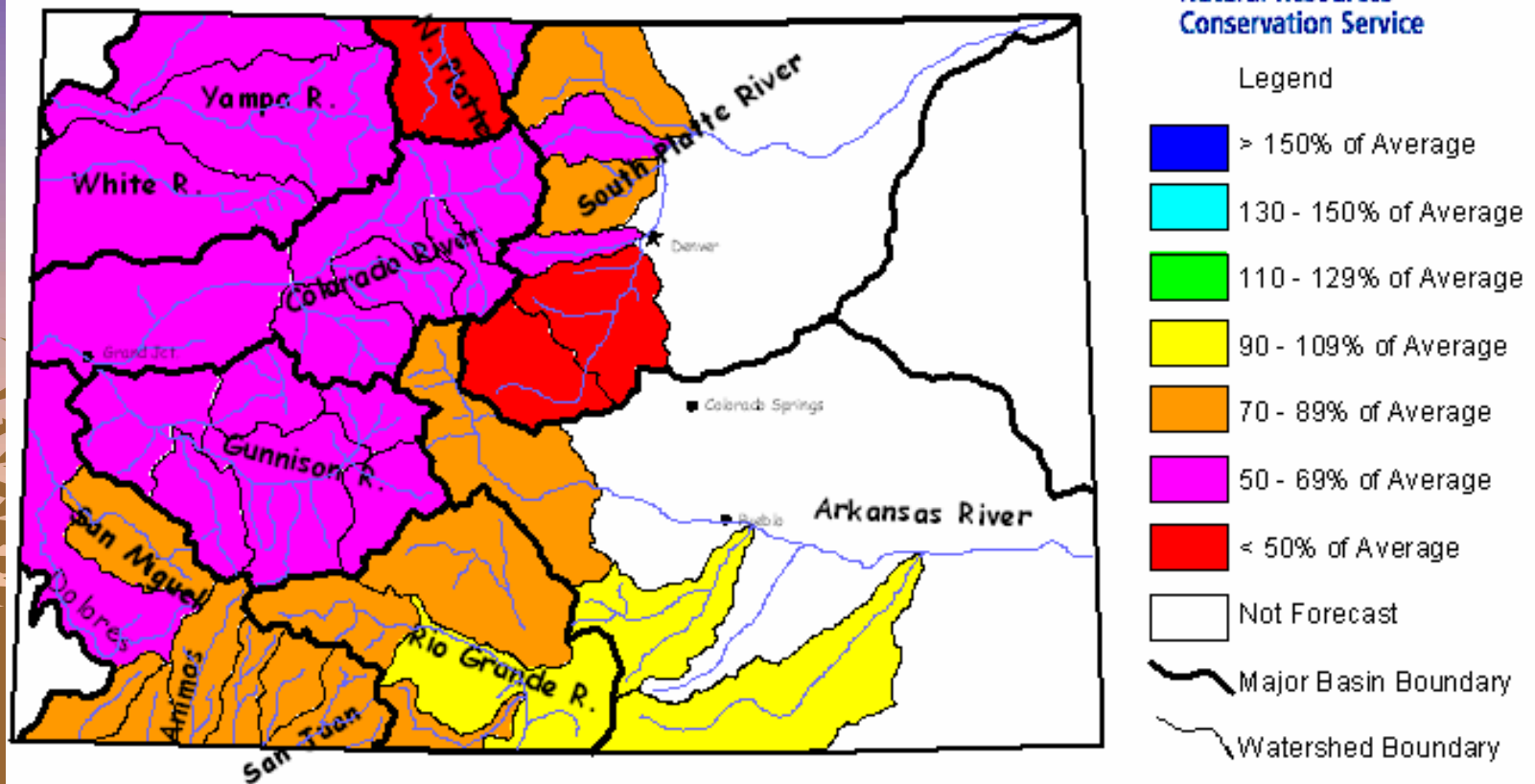


Animas River Streamflow

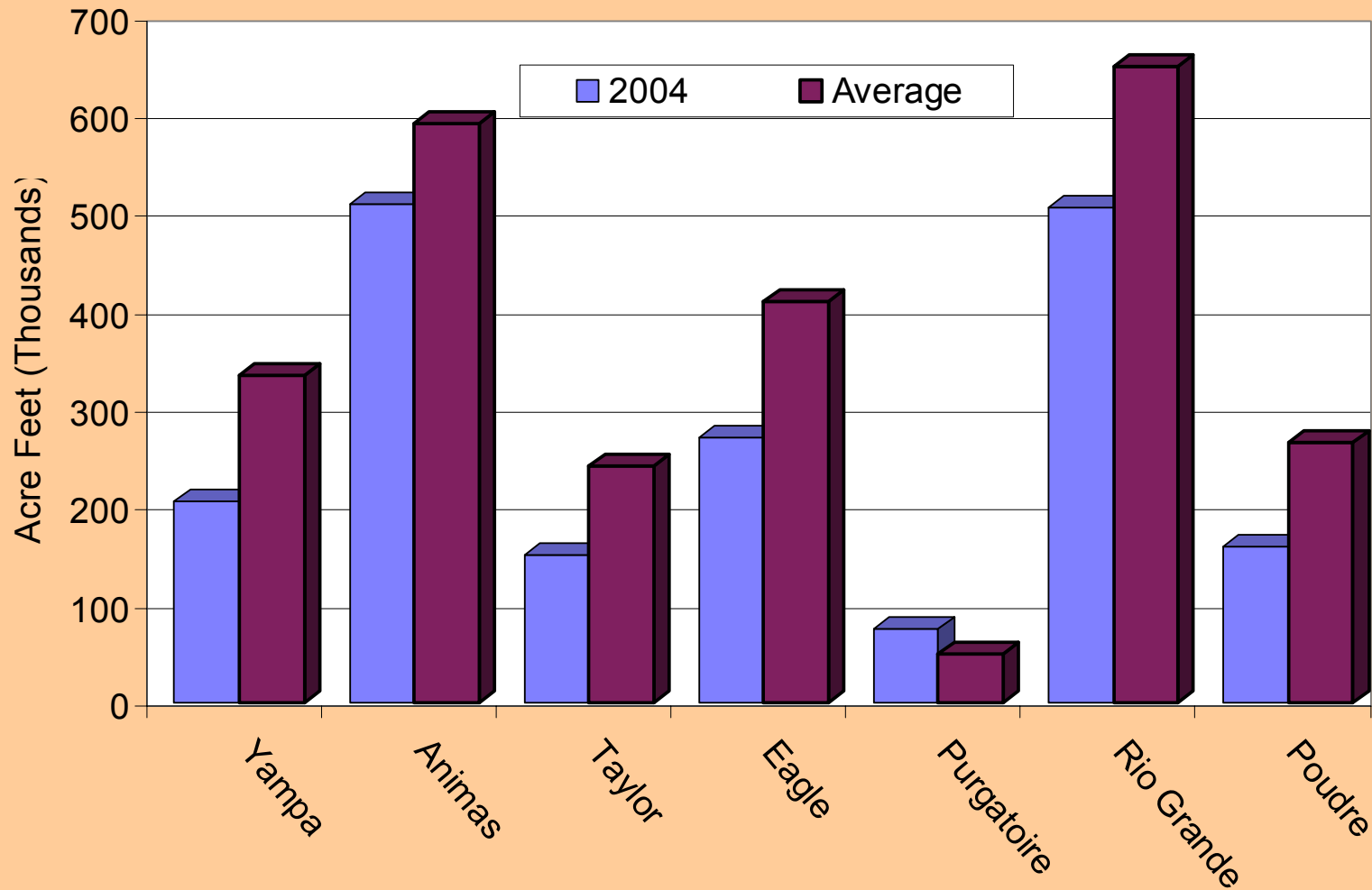


2004 Runoff Forecasts

Streamflow Forecasts May 1, 2004



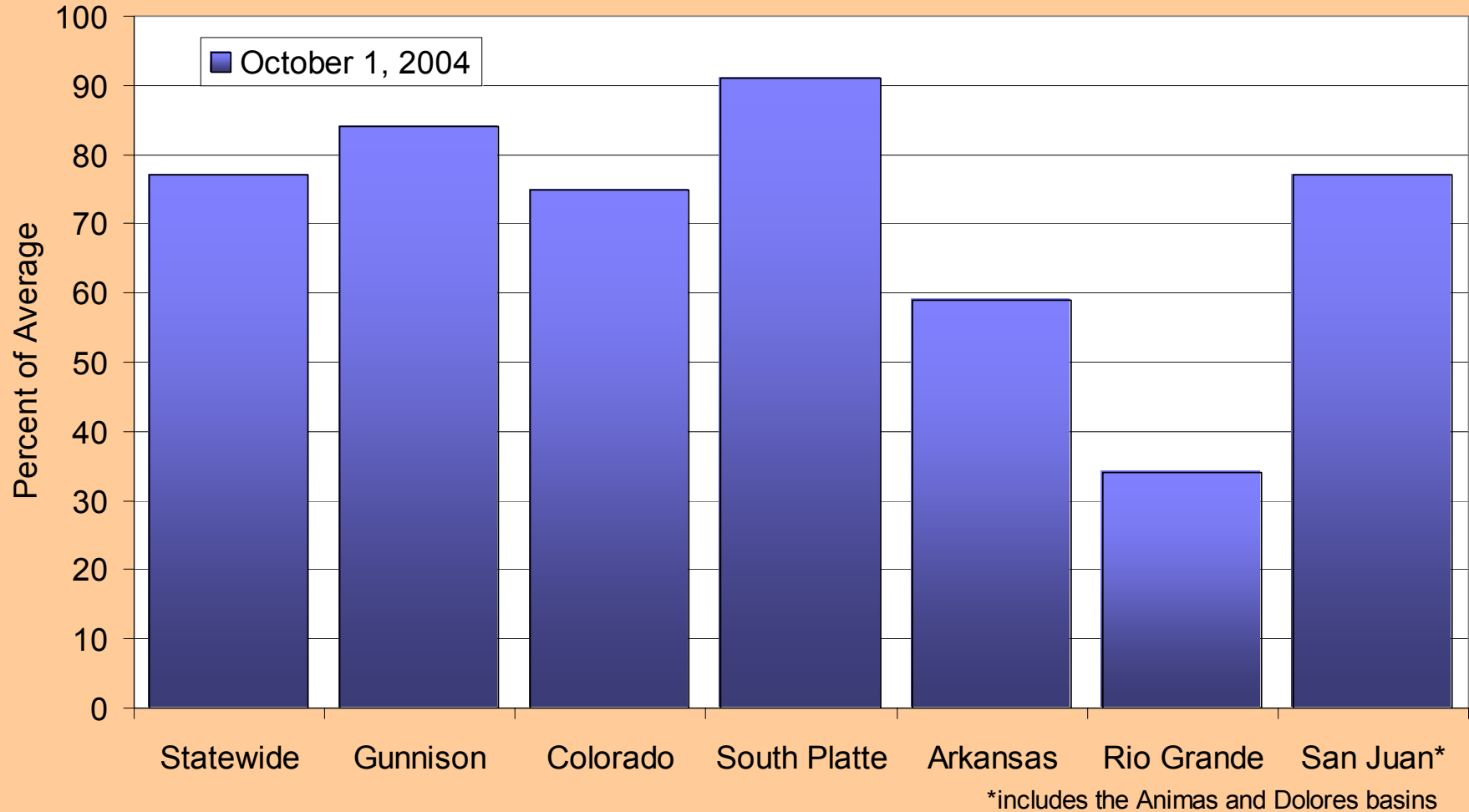
Streamflow for 2004 vs. Average



2004 Reservoir Storage

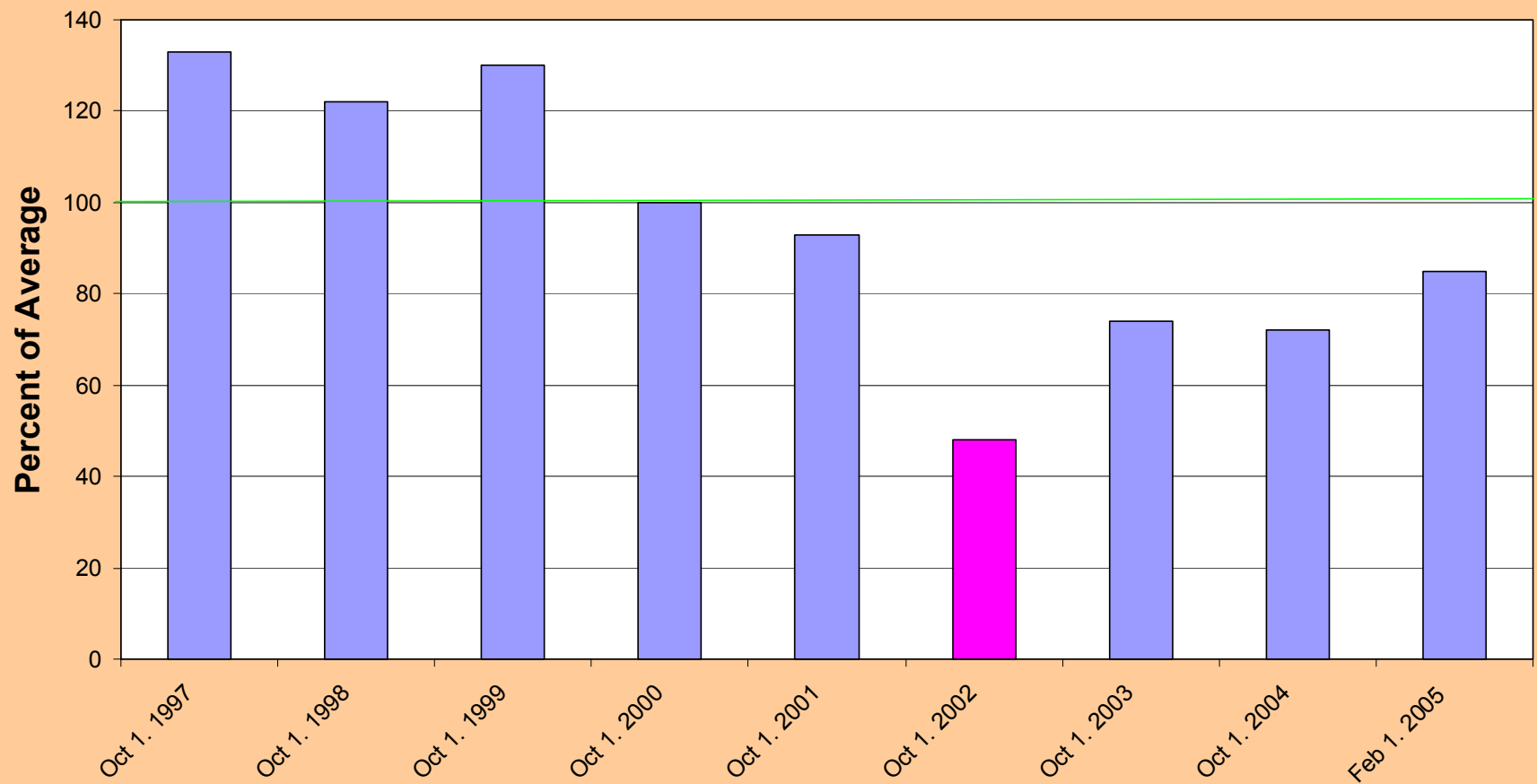
- Reservoir storage was generally below average throughout the year, statewide.
- The summer demands essentially wiped out any gains in storage during the runoff season.

Reservoir Storage by Basin for Oct 1, 2004



Colorado Reservoir Storage

**Colorado Statewide Reservoir Levels on October 1st
for Years 1997- 2004 and Feb 1, 2005**



Provisional Data Provided by NRCS

WY 2004 Summary

- A mild winter again
- Another year with below average snowmelt runoff
- Generous growing season precipitation east of the mountains
- Coolest summer in a looong time
- Improvements in soil moisture
- Reservoirs hung in there
- Significant runoff from rains

Colorado Climate Center

Colorado State University

- Data and Power Point Presentations available for downloading
- **<http://ccc.atmos.colostate.edu>**
click on “Drought”
then click on “Presentations”

Natural Resources Conservation Service

Snow Survey Office

- Access to snowpack, precipitation, reservoir data and streamflow forecast information available at:

<http://www.co.usda.gov/snow/snowindex.html>